

CLAIMS

Now, therefore, the following is claimed:

1 1. A system for protecting configuration data of a programmable
2 execution unit, comprising:
3 a programmable array; and
4 programming logic configured to receive configuration data and to program
5 the programmable array, based on the configuration data, such that the programmable
6 array comprises functional logic and activation logic, the activation logic configured
7 to enable the functional logic upon detection of an activation key.

1 2. The system of claim 1, wherein a portion of the configuration data
2 comprises data representative of an activation key, the programming logic configured
3 to store the data representative of the activation key in the programmable array.

1 3. The system of claim 2 wherein the activation logic is further
2 configured to compare a received bit stream to the stored data representative of the
3 activation key, the activation logic further configured to enable the functional logic if
4 a portion of the second bit stream matches the activation key.

1 4. The system of claim 2 wherein the data representative of the activation
2 key comprises a copyright notice corresponding to the configuration data.

1 5. The system of claim 1, wherein a portion of the configuration data
2 represents an activation key, the activation logic configured to cryptographically hash

3 the portion into a first hash value and store the first hash value in the programmable
4 array.

1 6. The system of claim 5, wherein the activation logic is further
2 configured to cryptographically hash a received bit stream into a second hash value,
3 the activation logic further configured to compare the first hash value with the second
4 hash value, the activation logic configured to enable the functional logic if the first
5 hash value substantially corresponds to the second hash value.

1 7. The system of claim 6, wherein the activation key comprises a
2 copyright notice corresponding to the configuration data.

1 8. A system for protecting configuration data of a programmable
2 execution unit, comprising:
3 a programmable execution unit (PEU) comprising programming logic
4 configured to receive configuration data for programming a programmable array
5 resident on the PEU; and
6 a device configured to transmit an activation key to the programmable
7 execution unit, the programmable array configured to enable the PEU in response to
8 the transmitted activation key.

1 9. The system of claim 8, wherein the configuration data comprises
2 functional logic configuration data and activation logic configuration data, the
3 programming logic configured to program the programmable array with functional
4 logic corresponding to the functional logic configuration data and activation logic
5 corresponding to the activation logic configuration data.

1 10. The system of claim 9, wherein the activation logic configuration data
2 comprises data representative of a valid activation key, the programming logic further
3 configured to store the data in the array.

1 11. The system of claim 10, wherein the activation logic is configured to
2 compare the stored data representative of the activation key with the transmitted
3 activation key, the activation logic further configured to enable the PEU if the
4 transmitted activation key and the data representative of the valid activation key are
5 substantially similar.

1 12. An apparatus for protecting a design of a programmable execution unit
2 (PEU), comprising:
3 a storage unit comprising configuration data;
4 a channel for transferring the configuration data from the storage unit to the
5 PEU; and
6 a system controller configured to transmit an activation key to the PEU.

1 13. An apparatus as claimed in claim 12, wherein a portion of the
2 configuration data comprises data representative of the activation key.

1 14. An apparatus as claimed in claim 13, wherein the PEU comprises
2 activation logic configured to store the data representative of the activation key, the
3 activation logic further configured to perform a comparison of the transmitted
4 activation key and the stored data representative of the activation key, the activation
5 logic further configured to enable the PEU if the comparison indicates substantial
6 similarity.

1 15. A system for protecting configuration data of a programmable
2 execution unit (PEU), comprising:
3 means for storing the configuration data;
4 means for transmitting the configuration data to the PEU;
5 means for programming the PEU in accordance with the configuration data;
6 and
7 means for enabling the PEU when the programmable execution unit receives
8 an activation key.

1 16. A method of protecting configuration data associated with a
2 programmable execution unit (PEU), comprising the steps of:
3 transmitting the configuration data from a storage device to the PEU over a
4 channel;
5 determining when all the configuration data has been transferred to the PEU;
6 and
7 transferring an activation key to the PEU.

1 17. A method for protecting configuration data of a programmable
2 execution unit (PEU), comprising the steps of:
3 receiving configuration data representative of a desired configuration for a
4 PEU;
5 programming the PEU based on the configuration data;
6 receiving a bit stream;
7 monitoring the bit stream for an activation key; and
8 enabling the PEU in response to the activation key.

1 18. The method of claim 17, wherein the configuration data comprises a
2 portion of data representative of an activation key and the programming step further
3 comprises the steps of:
4 storing the data representative of the activation key on the PEU.

1 19. The method of claim 18, wherein the receiving a bit stream step further
2 comprises the step of comparing the bit stream to the stored data representative of the
3 activation key.

1 20. The method of claim 19, further comprising the step of:
2 enabling the execution unit if the bit stream corresponds to the data
3 representative of the activation key.

- 1 21. A method for protecting configuration data of a programmable
2 execution unit (PEU), comprising the steps of:
3 receiving configuration data;
4 programming the PEU, based on the configuration data, such that the
5 programmable array comprises functional logic and activation logic; and
6 enabling the functional logic upon detection of an activation key by the
7 activation logic.